

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington D.C. 20554**

In the Matter of

Recommendations of the Independent Panel  
Reviewing the Impact of Hurricane Katrina on  
Communications Networks

EB Docket No. 06-119  
WC Docket No. 06-63

To: The Commission

**PETITION FOR CLARIFICATION OR RECONSIDERATION  
OF  
NEXTG NETWORKS, INC.**

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## **I. INTRODUCTION AND SUMMARY**

Pursuant to Section 1.429(a) of the Commission's Rules, NextG Networks, Inc., on behalf of its operating subsidiaries, NextG Networks of NY, Inc., NextG Networks of California, Inc., NextG Networks Atlantic, Inc., and NextG Networks of Illinois, Inc., (collectively "NextG"), petitions the Commission to clarify that Distributed Antenna System ("DAS") Nodes are not "cell sites" as that term is used in the Commission's new backup power rule, codified at 47 C.F.R. § 12.2 (the "Rule"), or in the alternative, if DAS Nodes are deemed to constitute "cell sites" for purposes of the Rule that the Commission reconsider and amend the Rule to eliminate the backup power requirement for DAS Nodes.<sup>1</sup>

NextG is a provider of cutting edge telecommunications services and networks that empower wireless providers to offer more reliable telecommunications services and greater coverage. NextG supports the Commission's initiatives to improve the reliability of communications networks and agrees with the goal of promoting better response and recovery efforts as well as increased preparedness for natural disasters.<sup>2</sup> However, in this Petition, NextG demonstrates that the Commission should clarify that the Rule does not apply to DAS Nodes because they are not "cell sites." As explained below, as generally understood, a "cell site" involves an antenna and the associated base station containing the electronics necessary to control the signals. In contrast, DAS Nodes are remote antenna locations that do not have the associated base station at the Node site.

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<sup>1</sup> Recommendations of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks, Order, FCC 07-107 (rel. June 8, 2007).

<sup>2</sup> Order at ¶ 5.

In the alternative, if the Commission deems that the Rule does apply to DAS Nodes, the Rule should be reconsidered and amended to clarify that the backup power requirements do not apply to Distributed Antenna System (“DAS”) Node deployments, like NextG’s. Such reconsideration and amendment is justified because (1) without reconsideration and amendment the Rule will adversely impact the public interest and the Commission’s policy goals, (2) the record did not support the adoption of the Rule, and (3) adequate notice was not provided of the possibility that the Commission was considering adopting requirements of the type and scope in the Rule.<sup>3</sup>

In the *Katrina Panel Order*, the Commission adopted a rule requiring LECs and CMRS providers to have eight hours of backup power at cell sites and other assets “normally powered from local AC commercial power.”<sup>4</sup> In this Petition, NextG demonstrates that a rule requiring eight hours of backup power at every DAS Node would be technologically, financially and politically infeasible. As a result, NextG demonstrates, while potentially beneficial in theory, the Rule, in reality, would prevent wireless carriers from further deploying their networks to improve coverage and reliability, which in turn would leave the nation’s wireless

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<sup>3</sup> *Order* at ¶ 77. 5 U.S.C. § 553; *See Sprint Corporation v. FCC*, 315 F.3d 369, 375-376 (DC Cir. 2003); *See also United Steelworkers v. Marshall*, 647 F.2d 1189, 1221 (DC Cir. 1980) (“The agency must ‘fairly apprise interested persons’ of the nature of the rulemaking, but a final rule may properly differ from a proposed rule — and indeed must so differ — *when the record evidence warrants the change.*”) (emphasis added).

<sup>4</sup> Specifically, NextG asks for reconsideration of that portion of the Order which states: “Local exchange carriers (LECs), including incumbent LECS (ILECs) and competitive LECs (CLECs), and commercial mobile radio service (CMRS) providers must have an emergency backup power source for all assets that are normally powered from local AC commercial power, including those inside central offices, cell sites, remote switches and digital loop carrier system remote terminals. LECs and CMRS providers should maintain emergency back-up power for a minimum of 24 hours for assets inside central offices and eight hours for cell sites, remote switches and digital loop carrier system remote terminals that are normally powered from local AC commercial power.”

telecommunications backbone more limited and of poorer value both in times of natural disasters and at times when emergencies strike only an individual. The harm of thwarting deployment of greater wireless coverage and in turn, emergency communications and wireless E911 coverage generally, substantially outweighs the potential benefits of the proposed backup power rule to ameliorate service outages during rare, worst case catastrophes, such as category 5 hurricanes.

NextG's communications networks include wireless transmitters on street light and utility poles throughout neighborhoods and areas that may be harder to reach from traditional high-site antenna towers. While the benefits of deploying these "micro-cell" Distributed Antenna Systems ("DAS") are enormous to increasing the capacity, coverage, and robustness of wireless networks, DAS Nodes on utility poles cannot accommodate eight hour backup power equipment for several reasons. First, the nature of DAS facilities requires the deployment of hundreds or even thousands of small antennas instead of just a few high-site antennas on towers, meaning the cost of deploying eight hour backup power generators for DAS would be substantial if not prohibitive. Second, there is likely inadequate capacity on utility and/or street light poles, or the surrounding ground area, to support the equipment needed to provide eight hours of power. Third, many other rules and regulations, such as local right-of-way and zoning codes, as well as environmental and hazardous materials regulations, would make it difficult or impossible for NextG to obtain approval to place its Nodes if NextG were also required to place backup power equipment at every site. The application of an eight hour backup power rule to DAS facilities may effectively end DAS deployments and deprive the public of technology with the potential to greatly improve wireless capacity and coverage.

As a result of the costs and practical limitations of backup power deployment on existing and new DAS facilities, the rule would have the effect of slowing deployment of advanced

wireless services, preventing wireless services from reaching all Americans, and would, as an unforeseen consequence, diminish wireless E911 coverage, generally. In light of this, NextG respectfully asks for reconsideration of the eight hour backup power rule in general, and particularly as applied to DAS Nodes.

NextG submits that consideration of the facts in this Petition is required by the public interest and warrants relief. Although the instant Petition relies on facts which were not previously presented to the Commission, reconsideration can and should be granted under the Commission's rules, as the public interest will be served by their consideration now.<sup>5</sup>

Separately, NextG believes that there was insufficient notice or recording evidence to support the Rule ultimately adopted. Accordingly, as NextG had no opportunity to present to the Commission concerning facts relevant to this proposed backup power rule nor could have learned about it previously through reasonable diligence, this Petition may be considered and granted now.<sup>6</sup>

## **II. BACKGROUND CONCERNING NEXTG'S DAS FACILITIES**

### **A. DAS Technology And Its Beneficial Uses**

NextG is at the cutting edge of the provision of telecommunications services using advanced technologies and capabilities. At the most general level, NextG provides telecommunications services to wireless providers that enable those entities to provide the next generation in wireless voice and broadband services. NextG provides its service via a network architecture that uses fiber-optic cable and small antennas mounted in the public rights-of-way ("ROW"), on infrastructure such as lamp posts and utility poles, to provide telecommunications services to wireless providers. NextG's fiber-based telecommunications service allows its

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<sup>5</sup> 47 C.F.R. § 1.429(b)(3).

<sup>6</sup> 47 C.F.R. § 1.429(b)(1)-(2).

wireless provider customers the ability to increase capacity and bandwidth. NextG's telecommunications service and network are currently utilized by both CMRS providers, and, to a lesser extent, wireless Internet Service Providers ("WISPs"). Thus, NextG's experience and the architecture and services deployed by NextG are simultaneously at both the core and the cutting edge of the wireless industry.

The architecture of NextG's DAS facilities consists of fiber optic lines leading to and connecting various equipment and antennas at remote locations called "Nodes," with a central "hub," typically located in a building on private property. In order to construct its DAS networks, NextG must have access to poles in the public rights-of-way (*e.g.*, utility poles, streetlight poles, or traffic signal poles). NextG installs its fiber optic lines either underground, in conduits, or aerially on poles. However, it must install its Node equipment (antennae and related equipment boxes) on poles. NextG uses either poles owned by the local utility company or poles owned by the municipality, or a combination of both.<sup>7</sup> In some situations, NextG may even install its own pole in an existing utility corridor.

As wireless providers seek to deploy the next generation of wireless services, including broadband, AWS, and 700 MHz, one of the central obstacles they face is the technical and practical limitations of traditional "high site" antenna towers and local management of their placement. Traditional towers and rooftops may be good solutions for providing low capacity, wide area coverage (assuming the sites can be built or acquired where they are needed). As demand for capacity on the network grows, however, more and more sites must be added to the network so that the spectrum frequencies that a particular operator is licensed for can be re-used

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<sup>7</sup> Declaration of David Cutrer ¶ 8 (attached as Exhibit 1 hereto).

more often.<sup>8</sup> Deployment of new sites is by no means an easy matter. Resistant local authorities and the cost and availability of locations, among other things, are significant impediments to the prompt roll out of new sites.

One of the most effective ways to add sites is through the use of low site antennas. The low antenna sites facilitate a greater re-use of the wireless spectrum since low-height antennas can be more easily isolated from each other, thus resulting in a much higher capacity and quality network that cannot be delivered by a network consisting entirely of high-site antennas. In addition to capacity benefits, a network of low sites in an urban area can provide coverage in many uncovered areas, or so-called “dead spots,” that would be “shadowed” under the traditional antenna locations or where zoning and planning laws simply prohibit the installation of high-site facilities. Higher capacity and greater coverage in turn are the necessary building blocks for continued deployment of wireless services.<sup>9</sup>

NextG has developed a telecommunications service offering based entirely on low sites. Specifically, NextG uses fiber-optic cable and small antennas mounted in the public right-of-way, on infrastructure such as lamp posts and utility poles. Using this fiber network and right-of-way infrastructure, NextG has effectively “split” a traditional cell site, keeping only the necessary pieces in the remote antenna location, and allowing the rest of the equipment to be placed in a centralized facility. NextG believes that this method of splitting and sharing is a vital and important engineering advance that economizes and maximizes use of spectrum. More

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<sup>8</sup> Capacity in a cellular network comes, in general, from reusing spectrum. The greater the number of radiating elements, the more often spectrum can be reused and the more capacity the network will have. Of course, this general statement varies somewhat depending on the type of technology used, *i.e.*, variants of TDMA or CDMA gain capacity and system performance in different ways. NextG’s wireless solution is “protocol agnostic” and can accommodate all forms of wireless technologies.

<sup>9</sup> Cutrer Decl. ¶ 7.



efficient use of spectrum means that higher bandwidth services can be delivered, build-out of existing spectrum allocations is significantly increased for greater coverage, and wireless network capacity is increased resulting in fewer dropped calls. This is the wireless spectrum-maximizing technology of DAS facilities.

Because of the practical and technical benefits, DAS is also proving critical in the roll out of networks by new AWS entrants and could prove important to support build out of facilities after the upcoming 700 MHz auction. New entrants are using DAS to compete with existing carriers. Difficulty obtaining sites and zoning for traditional macro cell deployments has lead some new entrants to choose DAS as the vehicle to facilitate their timely roll out. Similarly, NextG's DAS networks could be instrumental for carriers attempting to meet the more stringent coverage benchmarks for licenses in the upcoming 700 MHz auction.<sup>10</sup>

#### **B. How NextG's DAS Networks Are Powered**

The power configuration supporting NextG's DAS facilities provides for commercial power to be delivered to Nodes in one of three ways. In the case of utility poles, NextG obtains commercial power from a secondary drop. In the case of streetlights, NextG connects power directly to the commercial power at the pole. Finally, in some cases, NextG installs a low AC voltage feed to a Node from a remote supply power distribution point, which is effective for distances up to approximately one mile.<sup>11</sup>

NextG's Nodes supporting wireless antennas are connected to a NextG hub from which telecommunications traffic is routed to the PSTN or out to other nodes. The NextG hub is either powered from a carrier-customer's power plant, or NextG's installs its own commercial power

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<sup>10</sup> *FCC Revises 700 MHz Rules To Advance Interoperable Public Safety Communications And Promote Wireless Broadband Deployment*, News Release, p. 3 (rel. July 31, 2007).

<sup>11</sup> Cutrer Decl. at ¶ 10.

service. If a Node loses power, the NextG network operations center will receive notification of the power outage and NextG will immediately contact its carrier customer and open a trouble ticket.<sup>12</sup> A very limited amount of backup power is currently used by NextG. Greater than 50% of NextG's Node sites do not currently have any form of battery backup. Those that do, typically have a 1-hour battery back-up solution installed. At the hubs, the majority of NextG's hub racks are powered with DC power from the carrier-customer's power plant, which at a minimum has battery backup and in many cases may have generator backup. In a few systems, NextG runs its hub racks from AC power, but NextG uses commercial UPC units to provide backup for the host racks.<sup>13</sup>

### **III. DAS NODES ARE NOT CELL SITES WITHIN THE MEANING OF THE RULE**

The Commission should clarify that DAS Nodes are not "cell sites" within the meaning or intent of the Rule. Instead, NextG's DAS Nodes are distinct from traditional cell sites because they involve antenna sites without any associated owned or controlled land or network switching equipment at the Node. It is generally understood that a "cell site" includes the base station equipment, typically on a large parcel of property. For example, the municipal code of the City of Ames, Iowa defines cell sites as "a tract or parcel of land that contains the wireless communication antenna, its support structure, accessory building(s), and parking and may include other uses associated with and necessary for wireless communication transmission."<sup>14</sup> The Town of Superior, Colorado similarly defines cell site as containing switching facilities,

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<sup>12</sup> Cutrer Declaration at ¶ 10.

<sup>13</sup> Cutrer Declaration at ¶ 10.

<sup>14</sup> See Ames Municipal Code, § 29.1307(2)(c), available at <http://www.cityofames.org/AttorneyWeb/pdfs/Chap29A13.pdf>; see also Boone County, Iowa Zoning Code, § 22 (L)(2)(b)(iii), available at [http://www.co.boone.ia.us/pdffiles/zoning\\_ord.pdf](http://www.co.boone.ia.us/pdffiles/zoning_ord.pdf) ("Cell Site means a tract or parcel of land that contains the wireless communication antenna, its support structure, accessory building(s), and parking, and may include other uses associated with and necessary for wireless communication transmission.").

often housed in an on-site equipment room.<sup>15</sup> Boone County Iowa also defines a cell site by the presence of a tract of land containing equipment.<sup>16</sup> Indeed, usage within the cellular industry has already noticed that cell sites and micro cells should be defined and treated differently. One intercarrier agreement spelled out the terms as:

Cell Site' means a cellular radio base station location consisting of radio, antenna, and power equipment, which provides cellular telecommunications service to a particular geographic area, and in which certain Components of a System are installed in accordance with this Agreement and an applicable Market Purchase Agreement. The term 'Cell Site' shall exclude mini-cells, micro-cells, and radio frequency (RF) extenders...<sup>17</sup>

The phrase "cell site" as used in the rule appears to have been adopted with the intention of addressing traditional high site facilities (*e.g.*, antennas on lattice towers with a full base station located at the base). As discussed above and demonstrated in the accompanying declarations, NextG's DAS networks effectively split a cell cite.<sup>18</sup> In NextG's DAS network, each Node is not a cell site, because the base station equipment is not located at the Node site.

On this basis, alone, the Commission should clarify that the Rule does not apply to DAS Nodes.

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<sup>15</sup> See Town of Superior Municipal Code, § 16-31, available at [http://www.townofsuperior.com/Portals/7/Documents/PDFs/Codes/Land\\_Use.pdf](http://www.townofsuperior.com/Portals/7/Documents/PDFs/Codes/Land_Use.pdf) ("Cellular telephone exchange (*cell site*) means an unmanned facility as defined by Section 40-1-103, C.R.S., which consists of equipment for the reception, switching and transmission of cellular telephone communications. Such facility may have elevated (either building mounted or ground mounted via a pole or tower) transmitting and receiving antennas, plus cellular base station equipment and interconnection equipment housed in an equipment room, shelter or cabinet.")

<sup>17</sup> See Master Purchase and License Agreement between Cellular Technical Services Company and Ameritech Mobile Communications, Section 1.4, available at <http://sec.edgar-online.com/1996/11/14/00/0000912057-96-026547/Section12.asp>.

<sup>18</sup> Cutrer Decl. ¶ 7.

#### **IV. THE SIZE AND COST OF DEPLOYING 8 HOUR BACKUP POWER AT EVERY NODE WOULD SIGNIFICANTLY DETER IF NOT PROHIBIT DAS DEPLOYMENT**

It is likely impossible, either economically or practically (or both), for NextG to install eight hour backup power sources at every Node on its DAS networks. NextG's initial research indicates that in order to provide full power for at least eight hours for its Nodes would require equipment that would weigh approximately three hundred fifty pounds, and perhaps more, and require an equipment box measuring over four and a half feet high.<sup>19</sup> The size and weight of these equipment cabinets would, in NextG's experience, significantly deter, if not outright prohibit, NextG's ability to deploy its DAS networks.

First, NextG will face significant resistance from utility pole owners who will seek to prohibit the installation of equipment boxes of such size and weight. For each Node on NextG's networks, it must install associated equipment. Those equipment boxes are typically very small, particularly in comparison to the battery backup cabinets that would be necessary to satisfy the Rule. For example, in some of its systems, NextG is deploying equipment boxes that are only approximately 24 inches tall, 6 inches wide, and 6 inches deep. Nonetheless, NextG frequently encounters resistance from utility pole owners regarding the attachment of even such small boxes.<sup>20</sup> Indeed, some utility companies purport to prohibit the attachment of any equipment boxes of any kind to their poles.<sup>21</sup> NextG can realistically expect to face significant opposition from pole owners to the attachment of backup power equipment of the size needed to satisfy the Rule. Indeed, there may be legitimate engineering concerns regarding the attachment of equipment of such size and weight to existing poles. Many poles may be structurally incapable

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<sup>19</sup> Cutrer Decl. at ¶14 & Attachment 1.

<sup>20</sup> Delsman Declaration at ¶ 6.

<sup>21</sup> Delsman Declaration at ¶ 6.

of accommodating such equipment, or may require costly and time consuming make-ready, at a minimum. In addition, many of NextG's Nodes are deployed on street light poles typically in urban locations.<sup>22</sup> Street light and traffic signal poles generally are not strong enough to hold equipment of the size and weight required to accommodate 8 hour backup power.

Second, the option of placing these power supplies on the ground next to utility poles would face significant opposition from local governments and citizens, and as a practical matter it would be difficult or impossible to obtain required local approvals. Local government zoning codes would be a barrier to these deployments. For instance, most local government zoning ordinances allow cities to reject placement of communications equipment in rights of way for discretionary aesthetic reasons, which large backup power boxes would almost certainly violate.<sup>23</sup> Other municipalities explicitly prohibit such "street furniture" in the public right of way.

Some Cities have very specific equipment size and weight limitations that would certainly preclude the installation of backup power equipment. For example, the City of New York has adopted regulations that permit equipment boxes that are only 13 inches by 9 inches by 4 inches. The City's regulations will allow an equipment box with a volume of no greater than 2.8 cubic feet, with a maximum width of 18 inches only upon a demonstration of an "operational need" to the City's satisfaction.<sup>24</sup> It would be impossible for NextG, or anyone, to install backup

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<sup>22</sup> Delsman Declaration at ¶ 12.

<sup>23</sup> See, e.g., *Sprint Telephony PCS, L.P. v. County of San Diego* (9<sup>th</sup> Cir. 2007).

<sup>24</sup> See, e.g., City of New York Department of Information Technology and Telecommunications, Request for Proposals For Franchises For The Installation And Use, On City-Owned Street Light Poles, Traffic Light Poles, Highway Sign Support Poles And Certain Utility Poles Located On City Streets, Of Telecommunications Equipment And Facilities, Including Base Station And Access Point Facilities, In Connection With The Provision Of Mobile Telecommunications Services, § 5(a) (released July 19, 2007).

power equipment in the public rights of way within the parameters of the New York City regulations.<sup>25</sup>

In addition, because of the lead or other chemicals contained in batteries and/or generators, the backup power units raise hazardous material issues, such as CERCLA.<sup>26</sup> Experience indicates that the placement of large industrial boxes along roadsides would face significant opposition from local government and residents, particularly considering both New York City and San Francisco have fought NextG's efforts to deploy its current minimally invasive small antennas on utility poles, the latter complaining that NextG would "blanket the state's utility poles" with its DAS antennas<sup>27</sup> and the former subjecting NextG to unreasonable delay and restrictions for antenna placement.<sup>28</sup> The Commission did not have a record of this information to consider at the time it adopted the eight hour backup power rule for cell sites, and given the public interest harm that would result from making DAS deployment impossible as demonstrated below, this new information must be considered now.

Finally, the cost of installing eight hour backup power would be prohibitive. NextG estimates that the costs of pedestal-mounting batteries sufficient to provide eight hour power backup would cost at least \$25,000 per Node.<sup>29</sup> This would severely disadvantage NextG,

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<sup>25</sup> NextG has also been involved in a multi-year lawsuit with the City regarding the City's barriers to NextG's entry in violation of Section 253 of the Communications Act.

<sup>26</sup> 40 C.F.R. § 302.4; *Gould, Inc. v. A & M Battery & Tire Serv.*, 232 F.3d 162, 167 (3rd Cir. 2000); *Axel Johnson, Inc. v. Carroll Carolina Oil Co., Inc.*, 191 F.3d 409, 411 (4th Cir. 1999).

<sup>27</sup> City of San Francisco's Opening Brief at 16, *San Francisco v. NextG Networks*, Complaint 05-03-010, California Public Utility Commission (Complaint filed March 9, 2005).

<sup>28</sup> See Opening Brief of NextG Networks at 10-11, *NextG Networks v. City of New York*, US Court of Appeals for the Second Circuit, 06-5696-CV (filed March 28, 2007).

<sup>29</sup> Delsman Declaration at ¶ 14.

undermine the economic feasibility and attractiveness of DAS, and quite possibly cost NextG its business.<sup>30</sup>

## **V. THE HARM OF APPLYING THE EIGHT HOUR BACKUP POWER REQUIREMENT TO ALL DAS NODES OUTWEIGHS THE POTENTIAL BENEFIT**

The deployment of DAS supports multiple public interest goals, including advancing the Commission's primary purpose of facilitating communications service deployments to all Americans and advancing the deployment of new technologies and services to the public.<sup>31</sup> Thwarting DAS deployment with a rigid application of the backup power Rule would cause immediate and lasting harm to the many public interest benefits DAS provides.

First, it is the Commission's policy to encourage the deployment of advanced technologies, a doctrine which the Commission cites regularly.<sup>32</sup> DAS is one such new communications technology, which both increases and improves communications services to the public and thereby serves the public interest. Moreover, in addition to being a new technology, DAS facilitates new technology. For example, DAS will facilitate the deployment of the

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<sup>30</sup> Delsman Declaration at ¶ 14.

<sup>31</sup> 47 U.S.C. § 151; 47 U.S.C. § 157(a) ("It shall be the policy of the United States to encourage the provision of new technologies and services to the public." Further, the notes to Section 157 direct the FCC to take specific action to ensure the deployment of advanced telecommunications capabilities including "removing barriers to infrastructure investment").

<sup>32</sup> *In the Matter of CommNet Communications Network, Inc. Request for Waiver and for Reinstatement of the 900 MHz Specialized Mobile Radio Service T Block License for MTA007, Dallas-Fort Worth, KNNX959*, Order, DA 07-2032, ¶ 13 (rel. May 9, 2007) (purpose of spectrum auction rules is "the rapid deployment of new technologies and services to the public"); *Continental Airlines Petition for Declaratory Ruling Regarding the Over-the-Air Reception Devices (OTARD) Rules*, Memorandum Opinion & Order, 21 FCC Rcd 13201, ¶ 3 (rel. November 01, 2006) (purpose of OTARD rules is "encouraging the rapid deployment of new technologies"); *E911 Requirements For IP-Enabled Service Providers*, First Report and Order and NPRM, 20 FCC Rcd 10245, Separate Statement of Commission Jonathan S. Adelstein (rel. June 03, 2005) ("Somewhere between one and two million Americans currently use some form of VoIP services. These services promise a new era of consumer choice, and we must continue to promote the deployment of new technologies.").

technology that will be deployed in the 22 MHz block of the upper 700 MHz band. Similarly, NextG's DAS services is being used by new entrants to deploy competitive networks that include recently acquired AWS spectrum.

As demonstrated above, the eight hour backup rule would be devastating to DAS generally, and to NextG specifically. If unchanged, the Rule could thwart the deployment of a nascent industry, as well as the wireless services and new technologies that it facilitates.

Second, the public interest requires the promotion of wireless communications technologies which make better use of the finite resource of radio spectrum, a goal served by DAS. The Communications Act specifically directs the Commission to "encourage the larger and more effective use of radio in the public interest,"<sup>33</sup> and as described above, DAS facilities allow carriers to expand wireless network capacity and coverage by more efficiently using their existing licenses without requiring new spectrum, serving this important goal. Encouragement of DAS facilities will promote effective and efficient use of the radio spectrum, the most finite resource in the Commission's care which the public interest demands be used well and effectively.<sup>34</sup> By using lower power antennas on utility poles, DAS presents an excellent

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<sup>33</sup> 47 U.S.C. § 303(g).

<sup>34</sup> *Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets*, Report and Order and FNPRM, 18 FCC Rcd 20604, ¶ 2 (rel. October 6, 2003) ("Facilitating the development of these secondary markets enhances and complements several of the Commission's major policy initiatives and public interest objectives, including our efforts to encourage the development of broadband services for all Americans.. and enable development of additional and innovative services in rural areas."); *Id.*, Joint Statement of Chairman Michael K. Powell and Commissioner Kevin J. Martin. ("By increasing spectrum access, this item will advance a number of the Commission's key policy goals. Access to spectrum is critical to development of a wireless broadband platform... And facilitating the ability to lease or transfer spectrum will expand spectrum access for innovators and entrepreneurs, increasing the number and variety of wireless applications available to consumers. Additionally, this item offers the promise of greater wireless deployment in rural America.")



solution for expanding coverage into residential areas that have traditionally eschewed deployment of macro site facilities.

Third, DAS deployments facilitate the reach of wireless broadband into more homes, offices, and apartment buildings throughout the country. Indeed, by using lower power antennas on utility poles, DAS presents an excellent solution for expanding coverage into residential areas that have traditionally been difficult to reach. This Commission has noted on multiple occasions that broadband deployment is one of the highest public interest goals at present.<sup>35</sup>

Fourth, deployment of services to underserved populations is another long-standing public interest goal of the Commission that would be thwarted by application of any burdensome backup power rule by putting DAS deployments at risk.<sup>36</sup> In this regard, NextG is providing service to CMRS provide MetroPCS enabling them to build out their network completely and

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<sup>35</sup> See *The FCC's Front Man Talks*, BusinessWeek, October 31, 2005 ("The Commission's top priority is broadband deployment and to make sure other new technologies are deployed as quickly as possible."), available online at [http://www.businessweek.com/magazine/content/05\\_44/b3957112.htm](http://www.businessweek.com/magazine/content/05_44/b3957112.htm); Remarks of FCC Chairman Kevin J. Martin, Georgetown University McDonough School of Business's Center for Business and Public Policy, November 30, 2006 ("During my tenure as Chairman, the Commission has worked hard to create a regulatory environment that promotes broadband deployment. We have removed legacy regulations, like tariffs and price controls, that discourage carriers from investing in their broadband networks, and we worked to create a regulatory level playing-field among broadband platforms.") available online at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DOC-268774A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-268774A1.pdf).

<sup>36</sup> Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies To Provide Spectrum-Based Services, Report and Order and FNPRM, FCC 04-166, ¶ 1 (rel. September 27, 2004) ("Over the past decade, most Americans have enjoyed dynamic growth in the variety and quality of wireless service offerings available to them, as well as increased choice among facilities-based telecommunications service providers. The Commission is committed to ensuring that this success is enjoyed by all Americans in all areas of the country"); Id. (Statement of Commissioner Michael J. Copps ("Anyone who lives in rural America knows first hand that rural consumers have fewer choices of carriers, more holes in their coverage, and that there are still areas of our country that have no service at all.")).

serve more underserved populations. The Rule in its current form would threaten that deployment.

Fifth, wireless broadband deployment creates redundancy of communications networks, which serves an important homeland security function in an age where having multiple lines of communications available in the event of man-made disasters is paramount.<sup>37</sup> DAS deployments facilitate the expansion of wireless broadband services. In the same way they increase coverage and capacity of wireless phone networks, the added capacity of DAS networks allow greater bandwidth to be devoted to additional applications, including broadband services.

Sixth and finally, greater coverage for wireless means more availability of wireless E911 emergency service to more people on a regular basis, a recognized goal of the Commission.<sup>38</sup> By expanding coverage and capacity, deploying wireless by new entrants, and pushing deeper into neighborhoods and previously hard to serve areas, DAS can help provide greater E911 coverage on a daily basis, but not if it is thwarted by unrealistic and unattainable backup power requirements.

Each of the above-mentioned public interest benefits standing alone is sufficient to outweigh the benefit of having eight hours of backup power for catastrophic, one-time events.

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<sup>37</sup> *Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks*, Declaratory Ruling, FCC 07-30, ¶ 27 (rel. March 23, 2007) (“Additionally, we believe that wireless broadband Internet access service can provide an important homeland security function by creating redundancy in our nation’s communications infrastructure.”).

<sup>38</sup> *See, e.g., Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, Fourth Further FNPRM, 71 FR 48506, ¶ 100 (rel. August 10, 2006) (“Wireless E911 is a vital step toward applying wireless technology to improving public safety. For many Americans, the ability to call for help in an emergency is the principal reason they own a wireless phone. A significant percentage of all 911 calls nationwide are made from wireless phones, and this percentage is growing... Wireless E911 provides a critical safety-of-life feature, and it should be deployed as quickly and ubiquitously as possible.”).

Collectively, they make the case overwhelmingly that the public interest requires relief for NextG from the backup power rule.

## **VI. NEITHER THE RECORD NOR THE NPRM SUPPORT ADOPTION OF AN EIGHT HOUR BACKUP POWER REQUIREMENT FOR EACH SITE**

### **A. The NPRM Did Not Provide Sufficient Notice to Support Adoption of the Rule**

The NPRM did not give notice to interested parties and those that would be significantly affected – like NextG – that the Commission might adopt backup power requirements for each individual cell site location. Far less did the Commission give notice that an eight hour backup power requirement might be adopted. Had either been proposed, NextG and other parties could have provided the Commission with additional information, like the information submitted in this Petition. Both the Katrina Panel recommendations<sup>39</sup> and the NPRM<sup>40</sup> refer generally to the Network Reliability and Interoperability Council (NRIC) best practices. However, the NRIC best practices do not mention a specific amount of time that backup power should be provided, much less eight hours. Furthermore, the NRIC standards only recommend that backup power should be available on site at “critical” locations “when appropriate,” thus recognizing not every site will have backup power, nor should it.<sup>41</sup>

Neither was the rule a logical outgrowth of the NPRM. The NPRM did not specify that a backup power rule might be mandatory at cell sites nor that a specified amount of backup power (let alone 8 hours) would be required, preventing interested parties from anticipating such a

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<sup>39</sup> Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks, *Report and Recommendations to the Federal Communications Commission*, p. 39 (June 12, 2006).

<sup>40</sup> *Recommendations of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks*, Notice of Proposed Rulemaking, FCC 06-83, ¶ 16 (rel. June 19, 2006).

<sup>41</sup> Network Reliability and Interoperability Council, Focus Group 1C, *Analysis of the Effectiveness of Best Practices Aimed at E911 and Public Safety*, Final Report (December 2005).

rule.<sup>42</sup> Given this lack of adequate notice that an eight hour backup rule at cell sites would be applied and lack of consideration of the impact of the rule, NextG's request for reconsideration on this issue is all the more appropriate and warranted.<sup>43</sup>

### **B. The Commission Did Not Rely On an Adequate Record**

Furthermore, the Record relied on by the FCC in issuing the Order does not support its apparent conclusion that an eight hour backup power requirement at cell sites would improve communications during emergencies, or would otherwise be in the public interest. NextG can find no comment or other evidence in the record addressing or suggesting eight hours as an appropriate standard, making its selection arbitrary by definition.<sup>44</sup> Support in the record is especially important when an agency imposes rules with a quantitative element, as such numbers may not be made up without violating the Administrative Procedures Act.<sup>45</sup>

NextG's review indicates that no party suggested the backup power requirement be implemented with specific granularity. At most, the FCC cites the National Emergency Number Association (NENA) comments on backup power. While NENA did advocate in favor of the

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<sup>42</sup> See *Environmental Integrity Project v. EPA*, 425 F.3d 992, 996 (DC Cir 2005) (“[A]n agency’s proposed rule and its final rule may differ only insofar as the latter is a ‘logical outgrowth’ of the former.”); *Arizona Public Service Company v. EPA*, 211 F.3d 1280, 1299 (DC Cir 2000) (A final rule is not a logical outgrowth of the proposal if “a new round of notice and comment would [be] the first opportunity for interested parties to offer comments that could persuade the agency to modify its rule.”).

<sup>43</sup> See fn. 3, *supra*.

<sup>44</sup> *Petroleum Communications v. FCC*, 22 F.3d 1164, 1172 (DC Cir. 1994) (When adopting a new rule an agency must have “examine[d] the relevant data and articulate[d] a satisfactory explanation for its action.”)(internal citation omitted).

<sup>45</sup> *WJG Telephone Company v. FCC*, 675 F.2d 386, 388 (DC Cir. 1982) (“[A]n agency may not pluck a number out of thin air when it promulgates rules...”)(internal citation omitted); see also *Time Warner Entertainment v. FCC*, 240 F.3d 1126, 1137 (DC Cir. 2001) (“We recognize that in drawing a numerical line an agency will ultimately indulge in some inescapable residue of arbitrariness ... But to pass even the arbitrary and capricious standard, the agency must at least reveal ‘a rational connection between the facts found and the choice made.’”) (internal citation omitted).

NRIC Recommendation 7-7-5204, released in the 2005 Report,<sup>46</sup> that NRIC recommendation is vague and meant to apply to all communications service providers, and as noted, specifically provides that backup power generators should be located on site only “when appropriate,” which suggests a flexible standard was being called for. There is nothing in the record addressing: the different backup power options; their costs; their size; the legal, practical or engineering limitations of different options; their availability; the regulatory limitations or their deployment; the industry standards; or any other relevant issue.

The Commission’s discussion of and justification for the rule in the Order is extremely limited. The Commission merely asserts that some commenters, including the NENA and St. Tammany’s Parish Communications District 1, emphasized the need for carriers to have backup power.<sup>47</sup> Without discussion, the Commission concludes that it will require backup power in the amounts set forth in the rule. The Commission stated that its “expectation is that this requirement will not create an undue burden since several reported in their comments that they already maintain emergency back-up power.”<sup>48</sup> However, the Commission reached this conclusion with no record regarding how many current cell sites have eight hour backup power, if any, or what cost and time would be required for companies to come into compliance with the new rule if they can at all. NextG’s Petition demonstrates that, in fact, many antenna locations do not currently have eight hour backup power.

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<sup>46</sup> Comments of NENA, *Recommendations of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks*, EB Docket 06-119, p. 6 (filed August 7, 2006).

<sup>47</sup> Order at ¶ 76.

<sup>48</sup> Order at ¶ 78.

## VII. CONCLUSION

NextG has met the public interest showing for reconsideration of the eight hour backup power rule at cell sites. For this reason, NextG respectfully urges the Commission to grant this Petition for reconsideration and in so doing clarify that the eight hour backup power rule does not apply to DAS Nodes because they are not cell sites within the meaning of the Rule, or in the alternative, amend the Rule to exclude DAS Nodes.

Respectfully submitted,

s / T. Scott Thompson\_\_\_\_\_

Robert L. Delsman, Vice President  
Government Relations & Regulatory Affairs

T. Scott Thompson  
Christopher A. Fedeli

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Washington, D.C. 20006  
(202) 973-4200

August 10, 2007

Attorneys for NextG Networks, Inc.

## Exhibit 1

### Declaration of David Cutrer

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of

Recommendations of the Independent Panel  
Reviewing the Impact of Hurricane Katrina on  
Communications Networks

EB Docket No. 06-119  
WC Docket No. 06-63

**DECLARATION OF DAVID CUTRER**

I, David Cutrer, do hereby state:

1. I am Chief Technology Officer and Co-Founder of NextG Networks, Inc. ("NextG"). NextG is a provider of cutting edge telecommunications services and networks that empower wireless providers to offer more reliable telecommunications services and greater capacity and coverage. This Declaration is being submitted in support of NextG's Petition For Reconsideration and Petition For Stay of the Commission's cell site back up power rule, 47 C.F.R. § 12.2.
2. I hold a Ph.D. and Masters degrees in Electrical Engineering from the University of California at Berkeley, and a Bachelor of Science degree in Electrical Engineering and Applied Physics from the California Institute of Technology.
3. Prior to co-founding NextG, I was co-founder, Chief Technology Officer, and Vice President of Engineering for LGC Wireless, Inc. I have been involved in the telecommunications industry, and particularly the wireless telecommunications industry, for over 10 years. Through my academic and employment experience, I have over 12 years of experience



with the design, construction, and operation of both wireline and wireless telecommunications systems.

4. In my role at NextG, I am intimately familiar with the technical and economic aspects of NextG's network and provision of telecommunications services.

5. Wireless telecommunications networks and service offerings have experienced tremendous growth in the past 10 years. During this time, wireless service providers have attempted to meet increased demand by building more wireless antenna "sites" that are traditionally mounted to either towers or rooftops of tall buildings in metro areas. The need for these cellular sites is growing at a rate outpacing the ability of the industry to supply it. While in 2001 there were roughly 120,000 cellular sites in the U.S. for all the carriers, the industry was expected to require more than 200,000 sites in 2005. The traditional solution to this problem is to continue to build out cellular sites using the historic model. That is, find a location that can handle a full complement of cell site equipment, resolve zoning issues, acquire the real estate, and then build the site. Despite the real construction challenges of building such a site, they are dwarfed by the real estate and zoning difficulties. Each location requires 200 square feet of real estate and the placement of a large set of antennas, an often even greater challenge. The difficulty in finding suitable locations for these sites is one of the root causes of the site deficit.

6. As a result, wireless service quality continues to suffer on many fronts including poor coverage ('dead spots'), blocked calls, and low bandwidth making many potential data applications infeasible. As wireless customers have become more dependent on their phones, they have also become more demanding of network quality of service.

7. NextG Networks has invented and developed a new telecommunication service offering based on using fiber-optic cable and small antennas mounted in the public rights-of-way (ROW), on infrastructure such as lamp posts and utility poles. Using this fiber network and ROW infrastructure, NextG Networks has effectively “split” a traditional cell site, keeping only the necessary pieces in the remote antenna location, and allowing the rest of the cell site equipment to be placed in a centralized facility.

8. NextG provides its telecommunications service by receiving communications signals that its customer hands off to NextG and then transporting those signals over its fiber optic facilities. This handoff and transport takes place at and through equipment configurations called “Nodes” that are located on utility or streetlight poles located in the public rights-of-way or in private utility easements. The equipment comprising a typical “Node” in NextG’s network includes a small, low-power antenna, laser and amplifier equipment for the conversion of radio frequency signals (“RF”) to optical signals (or from optical to RF), fiber optic lines, and associated equipment such as power supplies, all of which are operated, controlled, managed, or maintained by NextG.

9. Upon handoff from its customer, NextG converts RF signal to light waves and transports the communications through NextG’s fiber optic network to a distant point that is typically, but not always, an aggregation point for NextG’s communications called a “Base Station” or “Hub.” The Hub is a central location that contains such equipment as routers, switches, and signal conversion equipment. The Hub is typically installed in a building located on private property. NextG converts light waves back to RF signals and hands the

communication signals back to its customer at the Hub, where the communications signals are received by the customer's network.

10. NextG's Nodes are currently powered using commercial power in one of three ways. In the case of Nodes on utility poles, NextG obtains commercial power from a secondary drop. This power can either be a metered service (with a meter installed on the pole or a pedestal), or with some utilities we have an agreement for "unmetered" service. In the case of streetlights, NextG connects power directly to the commercial power at the pole. Finally, in some cases, NextG uses a low AC voltage feed to a Node from a remote supply power distribution point (up to approximately 1 mile). Any NextG network elements at the Node location are powered as described above. The NextG hub is either powered from the Operator's power plant, or we install our own commercial power service at the hub. If any one of the Nodes loses power, the NextG network operations center will receive notification of the power outage, open a trouble ticket, and immediately contact our carrier customer. Depending on the agreement between NextG and the customer, NextG may undertake to promptly remedy the outage.

11. Nodes only cover small geographic areas, so if power is lost only a small area is affected. A typical Node covers between 0.1 and 0.2 square miles depending on design requirements and the characteristics of the area covered. A large percentage of NextG's Nodes are located in areas that also receive coverage from some other source (such as macro cells/towers). The NextG DAS solution is used either to provide coverage where towers have traditionally been unable to do so (in so called "dead spots" or "shadow" areas), or is used to enhance capacity. In the "coverage" application, there would typically not be strong coverage

from surrounding macro cells. However, only in very rare cases would there be no coverage whatsoever, and in those cases, the wireless user would likely be able to receive a signal just a short distance away, once they were out of the "shadow" or "dead spot." In the "capacity" type application, there is often good complementary coverage from the macro network.


12. A very limited amount of back up power is currently deployed by NextG at its Nodes. More than 50% of NextG's Node sites do not currently have any form of back up power, and of those Nodes that do have some back up power, they typically have a 1-hour battery back-up solution installed. At the hubs, the majority of NextG's hub racks are powered with DC power from the operator's power plant, which at a minimum has battery back up and in many cases has generator back up. In a few systems, NextG runs its hub racks from AC power, but NextG uses commercial UPC units to provide back up for the host racks.

13. None of NextG's currently installed Nodes or Nodes that are have been engineered and are in the process of installation have eight hour back up at the Node.

14. NextG's current understanding is that in order to provide back up full power for eight hours at its DAS Nodes, the most practical solution possible would be batteries. However, in order to provide back up for 8 hours at full power, the equipment enclosure box would be approximately four and a half feet high and would weigh approximately 350 pounds. Attached to my Declaration as Attachment 1 are copies of equipment specifications for the Novus Alpha Micro XL3 equipment cabinet and the Alpha "AlphaCell GXL" battery. To provide 8 hours of full power would require four of the 88 Amp-Hour GXL180 batteries, which would require the Alpha Micro XL3 cabinet.

15. Assume that it even could overcome local legal, regulatory and practical barriers and pole attachment barriers, the total cost for NextG to retro-fit all of its Nodes to comply with an eight hour backup power requirement would be at least \$25,000 per Node. NextG's ICB customer agreements do not provide for such back up power and the pricing is not designed to recover such a cost. Thus, NextG would also need to obtain the agreement of its customers to the additional cost.

I declare under penalty of perjury that the statements contained in this Declaration are true and correct.

  
\_\_\_\_\_  
David Cutrer

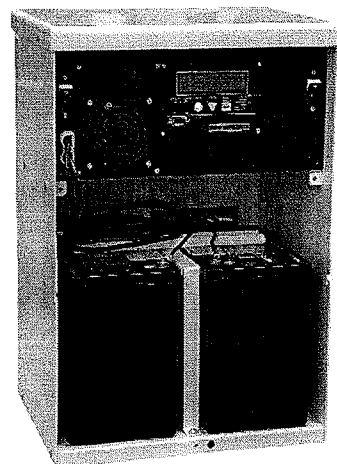
Dated July 30, 2007

## Attachment 1

# Power

## Novus Micro Series

Outdoor UPS System



Novus Micro with  
optional LCD Display

- > Clean, uninterruptible backup power guarantees your system will remain up and running during power outages
- > Wide range Automatic Voltage Regulation without going to batteries extends battery life, even during periods of surge or sag in voltage from utility power.
- > External communications via RS-232 port or (optional) SNMP Ethernet interface provides local or remote monitoring control
- > Six independently programmable control and report relays allow tracking and controlling of key functions<sup>1</sup>
- > User-friendly LCD display allows “at-a-glance” monitoring and troubleshooting<sup>2</sup> (default on 1000)
- > Event and alarm logging with time and date stamping simplifies and accelerates troubleshooting
- > A wide operating temperature range of -40 to 50°C (-40 to 122°F)<sup>3</sup> is suitable for the most extreme operating environments
- > Temperature compensated battery charging protects batteries from over charging at extreme temperatures

The Novus Micro Series provides constant, reliable backup power for Access Control, Security Public Utility and Telecommunications applications in a compact all-in-one enclosure. The Novus Micro UPS Series provides the same functionality as the Novus FXM Series, for lower power applications in a single, easy to install cabinet. Optional add-on battery cabinets support applications where longer backup times are required. Each power level is available in either North American (120V/60Hz) or International (230V/50Hz) variants.

<sup>1</sup>This feature is available on the Novus Micro 1000 Model only.

<sup>2</sup>This feature is optional for the Novus Micro 300 model.

<sup>3</sup>This applies to the UPS module only. Batteries may require a heater mat at lower temperatures.





## Novus Micro Series

### Nominal Specifications

Power Module:	Novus Micro 300		Novus Micro 1000	
	North America	International	North America	International
Nominal Voltage:	120VAC	230VAC	120VAC	230VAC
Nominal Frequency:	60Hz	50Hz	60Hz	50Hz
Input Current:	5.4A	2.8A	14A	7.3A
Output Current:	2.5A	1.3A	8.3A	4.3A
Output Power at 50°C:	300W/VA	300W/VA	1000W/VA	1000W/VA
Battery String Voltage:	24VDC	48VDC	48VDC	48VDC

\* Consult your Alpha Sales Representative for lead

### General Specifications

#### Performance

Input Voltage Range (120VAC):	85 to 175VAC w/o going to batteries
Input Voltage Range (230VAC):	150 to 328VAC w/o going to batteries
Output Voltage Regulation:	±10% over full input voltage range
Output Voltage Waveform:	Pure sine wave
Typical Efficiency (full resistive load):	>92% (line mode)
Typical Output Voltage THD:	<3%
Typical Transfer Time:	<5ms
Audible Noise @ 1m:	45dBA

### Standard Features

Hot-swappable batteries  
Novus User Software: Windows™-based communication software  
External user input: self test, alarm and EPO (Micro 1000)  
Wall, pole, or pedestal mountable (XL and XL<sub>2</sub>)  
Automatic Voltage Regulation (AVR)  
User adjustable charger (3A, 6A, 10A)  
Programmable dry contact relays (NC & NO)  
Reverse battery polarity protection

### Environmental Specifications

Operating Temperature:	-40 to 50°C
Storage Temperature:	-40 to 75°C
Altitude (ft/m)*:	12,000/3658

\* De-rate 2°C per 1000ft (305m) above 4500ft (1370m)

### Mechanical Specifications

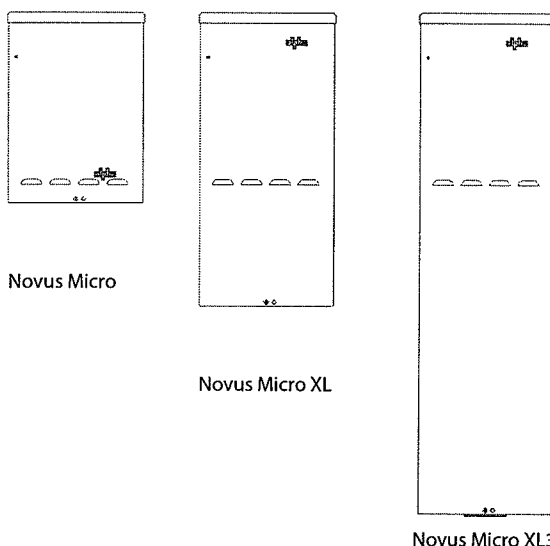
Novus Micro	Micro	Micro XL	Micro XL3
Width (in/mm):	14.1/358	14.1/358	14.1/358
Height (in/mm):	19.67/499.6	30.57/776.5	52.37/1330.2
Depth (in/mm):	11.56/293.6	11.56/293.6	11.56/293.6
Weight (lb/kg)*			
Novus Micro 300:	44/20	50/23	70/32
Novus Micro 1000:	47/21	52/24	62/28

\* Stated weight does not include batteries.

### Battery Runtimes\*

	Novus Micro	Novus Micro XL	Novus Micro
300 W	2x50Ah Batteries 2 hrs 12 mins	2x109Ah Batteries 5hrs 22 mins	4x109Ah Batteries 11hrs 45mins
	4x18Ah Batteries 26 mins	4x50Ah Batteries 1 hr 27 mins	4x109Ah Batteries 3hrs 36 mins

\* Battery runtime depends upon the loads, the battery and the operating temperature. Other battery options are available. Contact Alpha for more information and specifications.



For more information visit [www.alpha.com](http://www.alpha.com)

Alpha Technologies

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Canada

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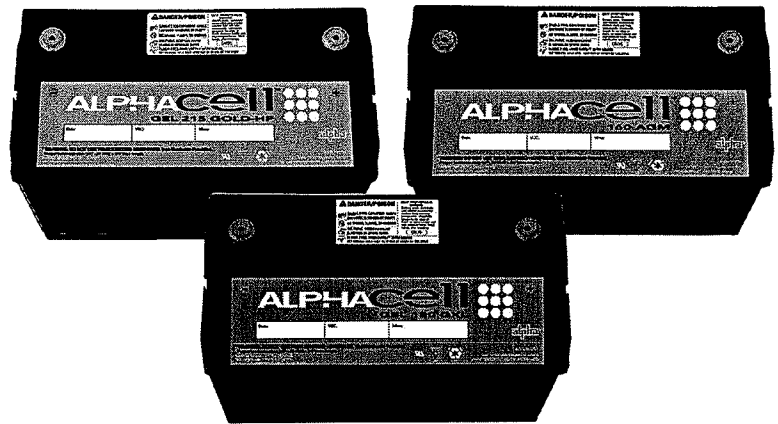
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# Power

## AlphaCell™ GXL

Valve Regulated Lead Acid Batteries



- Batteries designed specifically for standby applications
- All models deliver 100% “out-of-box” capacity — no cycling required
- Premium Gel models offer 50% longer life than traditional gel batteries
- Seven models incorporating four different battery technologies
- Full replacement, non-prorated warranties
- Convenient carrying handle standard on all models

Alpha's standby battery offering includes six different models incorporating four separate battery technologies, ensuring optimal performance for all outdoor powering applications. These batteries provide improved performance, longer runtimes and extended service life.



## AlphaCell GXL

### General Specifications

Model:	Gold HP (215, 190)	Gel GXL (210, 180)	GXL HP (85)	AGM (160)
Warranty <sup>1</sup> :	6 year Full replacement	4 to 5 year Full replacement	5 year Full replacement	1 year Full replacement
Service Life:	Extended	Long	Extended	Average
Runtime (minutes) <sup>2</sup> :	215, 190	210, 180 & 165	85	160
Sealed VRLA:	Valve regulated lead acid	Valve regulated lead acid	Valve regulated lead acid	Valve regulated lead acid
Heat Resistant:	Extreme	High	Extreme	Moderate
Hydrogen Emission:	Low	Low	Low	Low
Terminals:	Threaded Insert 1/4" - 20 UNC	Threaded Insert 1/4" - 20 UNC	Threaded Insert 10-32 UNF	Threaded Insert 1/4" - 20 UNC

### Specifications

Model:	215 Gold HP	210 GXL	190 Gold HP	180 GXL	85 GXL-HP	160 AGM
Silver Alloy:	Yes	Yes	Yes	Yes	Yes	No
Typical Runtime (minutes) <sup>2</sup> :	215	210	190	180	85	160
Cells Per Unit:	6	6	6	6	6	6
Voltage Per Unit:	12.8	12.8	12.8	12.8	12.8	12.8
Conductance Value:	1175	1175	1100	1100	600	1300
Max. Discharge Current (A):	900	900	900	900	600	800
Short Circuit Current (A):	2800	2800	2600	2600	2200	3300
10sec Volts @ 100A:	11.4	11.4	11.3	11.3	10.8	11.6
Ohms Impedance 60Hz:	0.0050	0.0050	0.0050	0.0050	0.0065	0.004
Capacity at 20hrs: (to 1.75VPC)	107Ah	106Ah	95Ah	94Ah	50Ah	88Ah
BCI Group Size:	31	31	31	31	22	27
Weight (lb/kg):	72/32.7	72/32.7	66/30	66/30	39.6/18	62/28
Height w/ Terminals (in/mm):	8.48/215.4	9.48/240.8	8.48/215.4	9.48/240.8	8.09/205.6	9.05/229.8
Width (in/mm) <sup>3</sup> :	13.42/340.9	13.42/340.9	13.42/340.9	13.42/340.9	8.99/228.3	12.57/317.8
Depth (in/mm) <sup>3</sup> :	6.80/172.7	6.80/172.7	6.80/172.7	6.80/172.7	5.47/138.9	6.83/173.4
Operating Temperature Range						
Discharge (°C):	-40 to 71°C	-40 to 71°C	-40 to 71°C	-40 to 71°C	-40 to 71°C	-40 to 71°C
Charge (with temp compensation):	-23 to 60°C	-23 to 60°C	-23 to 60°C	-23 to 60°C	-23 to 60°C	-23 to 60°C
Float Charging Voltage (VDC):	13.5 to 13.8	13.5 to 13.8	13.5 to 13.8	13.5 to 13.8	13.5 to 13.8	13.5 to 13.8
AC Ripple Charger:	0.5% RMS or 1.5% of float charge voltage recommended for best results. Maximum allowed = 4% P-P					

#### Notes:

<sup>1</sup> Warranty varies by country and region. Consult your sales person for details.

<sup>2</sup> Runtimes calculated using a 25A DC constant current load with voltage discharge to 1.75V/cell @ 25°C.

<sup>3</sup> Dimensions at top of battery.

### Current Discharge Ratings Table in Amps (end Voltage 1.75VPC)

Hours	1	2	3	4	6	8	10	12	20	24	48	72	100
215 Gold	67.8	40.5	29.1	22.9	16.1	12.6	10.2	8.7	5.46	4.61	Call*	Call*	Call*
210 GXL	66.3	39.6	28.5	22.4	15.8	12.3	10.0	8.54	5.34	4.51	Call*	Call*	Call*
190 Gold	64.5	37.1	26.6	20.8	14.6	11.4	9.4	7.9	4.96	4.2	2.2	1.5	1.08
180 GXL	61.2	35.2	25.2	19.7	13.9	10.8	8.9	7.5	4.7	4.0	2.1	1.4	1.03
85 GXL HP	33.2	18.8	13.3	10.4	7.34	5.70	4.68	3.97	2.50	2.12	1.11	0.76	0.56

\* Call Alpha for current discharge ratings.

For more information visit [www.alpha.com](http://www.alpha.com)

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Canada Burnaby, British Columbia Tel: 604 430 1476 Fax: 604 430 8908

049-253-10-A002 (5/07)

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## Exhibit 2

### Declaration of Robert L. Delsman

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of

Recommendations of the Independent Panel  
Reviewing the Impact of Hurricane Katrina on  
Communications Networks

EB Docket No. 06-119

WC Docket No. 06-63

**DECLARATION OF ROBERT L. DELSMAN**

I, Robert L. Delsman, do hereby state:

1. I am Vice President, Government Relations & Regulatory Affairs of NextG Networks, Inc. ("NextG").
2. In my role as Vice President, Government Relations & Regulatory Affairs for NextG, I have personal knowledge of the telecommunications services provided by NextG, NextG's equipment and network, and of their legal and regulatory status. In addition, I have been personally involved in every aspect of NextG's attempts to access the public rights-of-way throughout the county in order to provide telecommunications services.
3. I have been an attorney in the telecommunications industry for over 10 years, including being an attorney for Metricom, Inc. from 1996 to 2001. As a result of my duties in my positions, I have had personal experience and knowledge with requirements imposed by local governments for access to public rights-of-way by telecommunications providers in hundreds of communities around the country. In addition, I have been personally involved in both the legal and practical issues involved in legal access and physical attachment to utility poles by telecommunications providers.

4. In order for NextG to provide eight hours of backup power it would need batteries that would weigh, at a minimum, approximately three hundred fifty pounds and would be enclosed in an equipment box measuring over four and a half feet high.

5. Keeping expenses minimal is essential to DAS deployment, because although the benefits of DAS deployments to the robustness, capacity, and coverage of a wireless network are enormous, high-site antennas are capable of delivering wireless signals for less money per square mile than DAS. Accordingly, if DAS were to become uneconomical, carriers might forego the opportunity to enhance their networks and provide better service to their customers and settle for weaker signals and lower bandwidth in many underserved areas.

6. NextG frequently encounters resistance from utility pole owners regarding the attachment of even small boxes housing equipment to provide non-backup power, as it has in Los Angeles. Indeed, some utility companies have communicated to NextG that they prohibit the attachment of any equipment boxes of any kind to their poles. NextG has been involved in negotiations with pole owning utilities that refused to allow such small box attachments or significantly opposed their attachment, and would never agree to allowing boxes over three hundred pounds to be attached to their poles.

7. I have reviewed the specifications required for eight hours of backup power from a leading provider of backup battery equipment, Alpha Technologies, documentation of which is attached to the Declaration of Mr. Cutrer as Attachment 1. It is my understanding that in order for NextG to provide eight hours of backup power it would need batteries that would weigh, at a minimum, approximately three hundred fifty pounds and would be enclosed in an equipment box measuring over four and a half feet high.

8. If NextG were required to install equipment necessary to provide eight hours of back up power at each of its Nodes, the requirement would significantly effect NextG's ability to deploy its facilities and provide its telecommunications services.

9. First, local government regulations and requirements would create a significant barrier that in many, if not the vast majority of, communities will completely prohibit NextG's ability to deploy. Because its facilities are deployed in public rights-of-way, NextG must deal with hundreds of communities around the country. NextG has already encountered significant resistance or impediments from local communities based just on NextG's desire to deploy its existing small Node equipment on poles in the public rights of way. Indeed, many communities seek to review NextG's deployment based on wholly subjective aesthetic criteria. NextG believes that such review is unlawful under Section 253 of the Communications Act, but nonetheless, must deal with municipalities and their concerns. Based on our experience, I am confident that many communities would deny any attempt to deploy equipment of the size that would be necessary to provide eight hours of back up power at each Node. Even if some communities may not prohibit the equipment outright, obtaining approval of such equipment would certainly significantly delay NextG's ability to deploy. It could easily take over a year to obtain approval. Such a delay would be deadly to NextG's ability to secure customer orders and provide service in a timely fashion.

10. Some cities have requirements that would prohibit such equipment outright. For example, the City of New York has adopted regulations governing the size of wireless equipment that will be permitted on poles in the public rights of way in the City. The City of New York has adopted regulations that permit equipment boxes that are only 13 inches by 9 inches by 4 inches.

The City's regulations will allow an equipment box with a volume of no greater than 2.8 cubic feet, with a maximum width of 18 inches only upon a demonstration of an "operational need" to the City's satisfaction.<sup>1</sup> It would be impossible for NextG, or anyone, to install back up power equipment in the public rights of way within the parameters of the New York City regulations.<sup>2</sup>

11. Second, as with local government, NextG must deal with pole owners. Even if a city approved the required equipment, NextG has encountered significant resistance by utility pole owners to the attachment of even small Node equipment. Indeed, some utilities purport to prohibit the attachment of any equipment box on poles. Based on our experience with utilities, it is clear that the equipment required to provide eight hours of back up power would face significant resistance from pole owners, and realistically, it is extremely unlikely that any pole owner would approve attachment to poles of the required equipment.

12. Moreover, NextG has installed its Nodes on many street light/traffic light poles. Indeed, access to such street light/traffic light poles is critical to NextG's business and technological plans. However, such poles are not going to be able to accommodate equipment required to provide eight hours of back up power. Moreover, given their typical location (*e.g.* downtown, urban sidewalks), there is likely no space on the ground to permit adjacent pedestal mounting.

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<sup>1</sup> See, *e.g.*, City of New York Department of Information Technology and Telecommunications, Request for Proposals For Franchises For The Installation And Use, On City-Owned Street Light Poles, Traffic Light Poles, Highway Sign Support Poles And Certain Utility Poles Located On City Streets, Of Telecommunications Equipment And Facilities, Including Base Station And Access Point Facilities, In Connection With The Provision Of Mobile Telecommunications Services, § 5(a) (released July 19, 2007).

<sup>2</sup> NextG has also been involved in a multi-year lawsuit with the City regarding the City's barriers to NextG's entry in violation of Section 253 of the Communications Act.



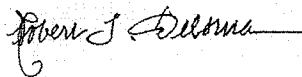
13. Third, other regulations, particularly environmental regulations, may also significantly impact NextG's ability to equipment, such as batteries or generators, necessary to deploy back up power.

14. Based on its current understanding of what would be required, NextG estimates that purchasing, mounting, installing, and housing batteries sufficient to provide eight hours of full power back up at NextG's nodes would cost at least \$25,000 per node. This additional cost of node deployment would cause NextG's cost to its customers to skyrocket, making its DAS business model uneconomical for most carriers. Accordingly, I believe the cost of an eight hour backup power rule would make it prohibitively expensive for NextG and jeopardize its ability to continue to operate as a going concern deploying DAS facilities for its customers.

15. If the Commission's eight hour back up rule were held to apply to each of NextG's Nodes, it would cause NextG irreparable harm. NextG is a new market entrant. It has had some success in obtaining orders from carrier customers to deploy networks in areas on the West and East coasts. If NextG's current Nodes were all suddenly deemed out of compliance with FCC rules, it would have a devastating effect. The impediments to deployment would undermine the availability of DAS as a deployment alternative, perhaps completely. Even if the Commission were to ultimately hold that DAS Nodes are not "cell sites" under the Rule, or otherwise clarify that the Rule does not apply, nonetheless, in the meantime, NextG would be irreparably harmed. New entrants and recent AWS licensees are deploying their facilities now. The unavailability of NextG's service and technology, even for a short period of time could destroy its one-time opportunity to serve such companies. It would also threaten NextG's relationships with its current customers. If the Commission's Rule apply to NextG's Nodes,

NextG cannot comply by August 10, 2007. Even if the equipment were available, and money were no object, NextG would still need to obtain approval from many local governments and utility pole owners. It would have to re-design all of its existing Node sites, and obtain approval for the new equipment. Obtaining the necessary authorizations for the initial equipment was a multi-year process. Going back to those communities and pole owners now would take a significant amount of time and would face resistance. Moreover, if NextG were to undertake such an effort and the Commission were then to amend the Rule or clarify its application at some point in the near future, NextG would have no way of recovering the lost investment of time and expense, or the political goodwill of municipalities and pole owners.

I declare under penalty of perjury that the information and statements contained in this Declaration are true and correct.

  
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July 30, 2007